t25_altcat_3 (TMLRACHJANc-QjwXMyfkDQLAhjaeQrFhWkYo)

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Let $l1\_altcat\_1 : \iota \Rightarrow o$ be given. Let $m1\_subset\_1 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $u1\_struct\_0 : \iota \Rightarrow \iota$ be given. Let $v6\_altcat\_3 : \iota \Rightarrow \iota \Rightarrow o$ be given. Let $k1\_altcat\_1 : \iota \Rightarrow \iota \Rightarrow \iota \Rightarrow \iota$ be given. Let $v1\_xboole\_0 : \iota \Rightarrow o$ be given. Let $v1\_zfmisc\_1 : \iota \Rightarrow o$ be given. Assume the following.

$$\forall X0.\forall X1.(m1\_subset\_1\ X0\ X1) \Rightarrow ((v1\_xboole\_0\ X1) \vee (X0 \in X1)) \tag{1}$$

Assume the following.

$$\forall X0.(l1\_altcat\_1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow ((v6\_altcat\_3\ X1\ X0) \Leftrightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\exists X3.(m1\_subset\_1\ X3\ (k1\_altcat\_1\ X0\ X1\ X2)) \wedge ((X3 \in k1\_altcat\_1\ X0\ X1\ X2) \wedge (v1\_zfmisc\_1\ (k1\_altcat\_1\ X0\ X1\ X2)))))))) \tag{2}$$

Assume the following.

$$\forall X0.(v1\_xboole\_0\ X0) \Leftrightarrow (\forall X1.\neg X1 \in X0) \tag{3}$$

Assume the following.

$$\forall X0.\forall X1.((\neg v1\_xboole\_0\ X0) \Rightarrow ((m1\_subset\_1\ X1\ X0) \Leftrightarrow (X1 \in X0))) \wedge ((v1\_xboole\_0\ X0) \Rightarrow ((m1\_subset\_1\ X1\ X0) \Leftrightarrow (v1\_xboole\_0\ X1))) \tag{4}$$

Assume the following.

$$\forall X0.(v1\_zfmisc\_1\ X0) \Leftrightarrow (\forall X1.\forall X2.((X1 \in X0) \wedge (X2 \in X0)) \Rightarrow (X1 = X2)) \tag{5}$$

Theorem 1

$$\forall X0.(l1\_altcat\_1\ X0) \Rightarrow (\forall X1.(m1\_subset\_1\ X1\ (u1\_struct\_0\ X0)) \Rightarrow ((v6\_altcat\_3\ X1\ X0) \Leftrightarrow (\forall X2.(m1\_subset\_1\ X2\ (u1\_struct\_0\ X0)) \Rightarrow (\exists X3.(m1\_subset\_1\ X3\ (k1\_altcat\_1\ X0\ X1\ X2)) \wedge ((X3 \in k1\_altcat\_1\ X0\ X1\ X2) \wedge (\forall X4.(m1\_subset\_1\ X4\ (k1\_altcat\_1\ X0\ X1\ X2)) \Rightarrow ((X4 \in k1\_altcat\_1\ X0\ X1\ X2) \Rightarrow (X3 = X4)))))))))$$